

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)	
)	
Innovation in the Broadcast Television)	
Bands: Allocations, Channel Sharing and)	ET Docket No. 10-235
Improvements to VHF)	

NOTICE OF PROPOSED RULEMAKING

**COMMENTS OF CMMB
AMERICA, LLC**

March 18, 2011

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Executive Summary

1. CMMB America is a newly formed entity one of whose missions is to facilitate the provision of mobile broadband services in the United States using Converged Mobile Multimedia Broadcasting (“CMMB”), whose core is the same OFDM technology that underlies LTE and MobileWiMAX.
2. CMMBA’s business plan is a win for all stakeholders (public, government, broadcasters and cellular operators):
 - a. Auctions BUT no repacking.
 - b. With no repacking, all UHF channels should be eligible for auction.
 - c. All broadcasters including LPTV (and translators) freely chose to retain their present channels or surrender them to the auction.
 - d. Those broadcasters that are providing broadband services pay the same amount of fees as the auction winners and enjoy the same regulatory status.
 - i. Pay over 10 years an amount equal to winning bid in auction minus their 5% annual fee
 - e. Existing mobile carriers choose whether to obtain UHF broadcast spectrum by public auction or private alliances and mergers.
 - f. Deficit reduction contributions will be significantly larger than under the Commission’s plan
 - g. No need for \$9+ Billion in new subsidies; no additional burden on the Federal budget.
 - h. LPTV broadcasters (including translators) will not be driven out of business without compensation.

- i. No minority or religious programming will be lost.
 - j. The number of sustainable rural LPTV stations will multiply several fold.
 - k. Rural broadband will happen sooner.
 - l. Thousands of jobs will be preserved and thousands more created, especially in economically challenged areas of the nation.
 - m. Basic broadband Internet services will be free.
3. Congestion on the Internet is not caused by too little spectrum. The problem, plain and simple, is one of network architecture. The one-to-one connections of the Internet need to be augmented by the one-to-many broadcasting capability for the most commonly downloaded content. If the substantial amount of common content were to be broadcast, instead of occupying thousands of individual unicast Internet sessions, congestion would disappear overnight .
4. Repacking is not a prerequisite to auctions, because there is no need to clear channels nationwide. By the time auctions will be completed, frequency-agile user devices will be ubiquitous. These receivers communicating with software upgradable base stations will be able to easily and inexpensively scan the entire broadcast band as well as other mobile service bands. Interleaving broadcast channels, once they are permitted to use OFDM, will not create any interference with mobile service channels using compatible modulation schemes.
5. Because mobile wireless providers will not need cleared channels, the lack of cleared channels will not diminish the value of the channels at auction. Repacking is not therefore a prerequisite to deficit reduction.

6. Auctions can and should be held for spectrum volunteered by broadcasters based upon Cellular Marketing Areas rather than legacy broadcast license RF contours. Harmonizing contours to CMA geopolitical boundaries should be left to a settlement process between licensees post the auction.
7. Permitting broadcasters to compete on an equal footing with mobile carriers using the adjacent 700 bands will engender much needed competition, and ensure underserved areas are addressed much sooner.
8. The CMMBA hybrid broadcasting/wireless broadband plan will meet the goals of the National Broadband Plan faster, better and cheaper than is likely by the legacy mobile carriers.
9. Eliminating an entire segment of the broadcast industry by refusing to allow LPTV (and translator) licensees to participate in the auction would be
 - a. grossly unfair and rank discrimination;
 - b. a confiscation of sunk investments, which in far too many cases, would consume lifetime savings of rural families; and
 - c. would deprive significant segments of the population of minority and religious voices in violation of the directives of the Communications Act and the public trust and oversight required of the Commission.
10. The Commission must take three actions **immediately**:
 - a. **Declare that “active and operating” LPTV licensees (and translators) as well as those holding valid construction permits, will be included in auctions - this is necessary to encourage investment in upgraded and expanded LPTV facilities ;**

- b. Permit experiments and demonstration trials of alternative technologies, both two-way interactive and one-way downloads, including OFDM/CMMB.**
- c. Commence a rulemaking to permit the adoption and use of alternative technologies by broadcasters.**

I. Introduction

11. CMMB America (“CMMBA”) is a newly-formed company created to address opportunities presented by the convergence of: (1) the unique ability of broadcasting to solve the growing congestion on the Internet caused by the rapidly increasing demand for video content; and (2) the emergence of an OFDM-based replacement (Converged Mobile Multimedia Broadcasting or “CMMB”) as a market ready and fully mature alternative to the antiquated ATSC 8VSB television broadcast standard.
12. The business plan of CMMB America is straightforward, both in concept and in implementation: in conjunction with existing broadcasters, marry the best of both broadcasting and traditional mobile services by leveraging what only broadcasting can do – distribute the commonly requested video, feature films and popular data content on a one-to-many basis, thus freeing huge capacity for the one-to-one session-oriented transmissions to the mobile carriers traditional infrastructure. This simple proposal has manifest benefits – it can be implemented much faster, with superior results and will be much cheaper to the consumer. In fact the end user not only will continue to receive free broadcasts, he will also receive free advertising- supported Internet services.
13. The CMMB technology is based upon Orthogonal Frequency Division Modulation (“OFDM”). CMMB was developed by Dr. Hui Lui, a US citizen who is a professor at the University of Washington in Seattle. He pioneered the OFDMA technology that is now core to the LTE and Mobile WiMAX systems. Dr. Lui is a co-founder of CMMB America and a member of its Board of Managers.. He was invited by the Chinese government to develop a next generation mobile video platform for their

domestic deployment. It was debuted at the Beijing Olympics in 2008, where it was an instant success; so much so that, in less than three years, CMMB is now operational in over 330 cities in China, with over 10 Million subscribers in the marketplace provided by virtually every major global consumer electronics manufacturer in state of the art multi-mode form factors (3G, 4G, Tablets, WiFi/Dongles, etc.).

14. CMMB clearly is a proven technology that is ready for implementation in the US. At core it is an OFDM technology. The benefits of an OFDM-based solution have been proven beyond doubt by its incorporation in every significant wireless broadband technology including LTE, Mobile WiMAX and virtually every digital television standard beyond the United States. The use of 4096 subcarriers per channel ensures its resistance to interference, and its isolation and ability to co-exist with other wireless networks in immediate proximity. Attachment 1 contains a brief summary of the superior attributes of CMMB. CMMB's substantially lower cost, coupled with the growing customer-acceptance of advertiser-supported Internet downloads, leads inexorably to free basic Internet service.
15. We at CMMB America, and a growing number of others in the broadcast industry, are convinced that this business plan will succeed and its undeniable benefits will become manifest very quickly; however:
 - a. What is puzzling, what we cannot grasp, is why the Commission is so determined to rush pell-mell into repacking without carefully evaluating the broadcasters ability to play a major role in achieving the goals of the National Broadband plan?
 - b. Why would the Commission not first look to the incumbents' ability to perform?

- c. Why doesn't the NPRM's threshold commitment to "spur ongoing innovation and investment in mobile services" apply to mobile services provided by broadcasters as well as by mobile carriers?
- d. Why would this Commission construct a process that will inevitably sharply decrease competition and eliminate many minority voices and religious broadcasters?
- e. And why would this Commission allow hundreds if not thousands of Low Power television broadcasters to forfeit their livelihood and sunk investment at the very time that a new technology and new business model has arrived, without at the very least giving them sufficient time to prove their worth and to demonstrate their technology to the investment community?

II. Purpose of Comments

16. The Notice in this proceeding announces that it constitutes "preliminary steps" in the "repurposing" of portions of the remaining broadcast spectrum for "flexible use" including mobile broadband. This statement is preceded by an affirmation of the Commission's "ongoing commitment" to addressing the growing demand for broadband services and "spur ongoing innovation and investment in mobile" services. (Notice at para. 1) We at CMMBA not only applaud these goals but we want to make it clear up front that we have no objection to the Commission's taking "preliminary steps" to repurposing (even though we strongly oppose repacking efforts). But what we do object to is the apparent refusal of the Commission to seriously consider alternatives or to clear away the obstacles to the broadcast industry proceeding in the

meantime – that is, to put real action behind its stated commitment to “spur” “innovation in and investment in mobile” services – and this includes immediately authorizing expanded experiments and demonstrations.

17. We think it is appropriate, indeed necessary, that these comments address directly what CMMB America considers the fallacies in the current FCC proposals for repurposing the broadcast spectrum. These comments will not address the subsidiary questions of dual allocations, sharing of repacked channels or use of VHF. We do believe there are serious technical and operational issues to both the concept of channel sharing as proposed in the NPRM and the use of the VHF frequencies for television and mobile services. We will leave specific responses to these issues to other broadcasters and to their national associations.

III. FCC Repacking and Auction plan v. CMMB America Alternative Plan

Proposed FCC Plan.

18. Although details of the Commission’s repacking and auction plan have yet to be completely spelled out, the essence of it has been telegraphed in statements from Commissioners, various studies and most recently in a series of presentations to broadcasting and industry groups. Our understanding is that, at this stage, the plan has the following basic elements:
- a. The top twenty channels (31-51, excluding ch. 37 used for radio astronomy) would be designated for auction and repacking.

- b. These top 20 channels would be repurposed (“repacked”) for broadband services as their primary allocation under the rules.
- c. Evidently most broadcast licensees who occupy channels 31-51 would have to vacate those channels whether they wanted to or not. They apparently would have only two choices: either (i) surrender their spectrum to the auction or (ii) be repacked to a lower channel. In the larger markets they would almost inevitably have to share their new channel with one or more other broadcasters. (The Commission nevertheless continues to claim in various places and at various times that the spectrum would be “contributed voluntarily by broadcasters.”)¹
- d. One of the main justifications for the repacking is the mobile carriers’ alleged need for identical channels cleared nationwide. In addition, the Commission staff argues that nationwide cleared spectrum will be substantially more valuable and thus produce greater revenue to the Federal Treasury in a public auction.
- e. A second major justification for the auction, and perhaps the most important to the Commission, is to produce net auction proceeds to contribute substantially to reduction of the Federal deficit.
- f. Recent FCC staff presentations have suggested that “repacking” may not be required in the smaller markets and that the cut-off may be as high as the top 20 or 30 markets.
- g. The FCC staff appears to have concluded that the classification of Low Power stations as “secondary” means that they can be shunted aside, without any

¹ E.g., Slide Deck, FCC State Broadcasters Association Webinar Series (hereinafter “Media Bureau Webinars”), March 2011, p.4.

compensation, if necessary to free up spectrum for the auction and mobile service providers.²

- h. Given a mandatory repacking and the conclusion that LPTV stations do not have to be accommodated, most LPTV licensees (and many translators) would lose everything. LPTV licenses in the repacked channels would not be able to join the auction, would not be able to shift to a shared channel and would not receive a single penny in compensation. The fate of those LPTV licensees, who by happenstance were awarded licenses in the lower UHF and VHF channels (channels 6-30), is somewhat less certain. However, given their classification as secondary, in any larger markets where there are not enough channels for every high power broadcaster including those being shifted down as well as the incumbents, it is quite likely that even the lower band LPTV stations would be forced off the air without compensation. The FCC staff does seem to be leaning toward exempting the Class A stations from a similar fate, but that has yet to be confirmed.

Deficiencies in the FCC Plan.

- 19. We do agree with the President and with the Chairman that there is a large broadband gap. We applaud the Chairman's energy in relentlessly spreading the word and in amassing large resources inside and outside the Commission in a single-minded

² The Chief of the Media Bureau did state during one of the series of webinar audio presentations on "Incentive Auctions: New Options for Broadcasters," held on March 16, 2011, with regard to LPTV and translator participation in the auction: that the staff has "not taken a position"; that "all options are on the table;" and that staff is "still studying" the matter. In contrast, the Bureau Chief stated that the staff is "contemplating" allowing Class A stations to fully participate.

pursuit of a solution. We certainly agree with the Chairman that the “Clock is Ticking.”³ And, finally, we agree that auctions (albeit ones that are truly voluntary and open to all stakeholders) are an important component of the solution. What we don’t agree with is the conclusion that sizable chunks of spectrum must be “cleared” so as to have the same channels across the nation, that is, that mobile services require the same channels nationwide.

20. What Precipitates the Internet Traffic Jam. The starting point in determining the validity of the Commission’s plan is an examination of the current structure of the Internet and the type of traffic that it carries. Several facts are not in dispute. Congestion is growing at a logarithmic pace due to the advent of the smart phone and tablets coupled with the continued growth in laptops, aided and abetted by a sea change in consumer viewing habits away from fixed TV sets to on-the-move devices. The statistics are by now familiar – the smart phone consumes something like 24 to 40 times as much bandwidth as its predecessor; 2G and 3G feature phones and tablets are expected to increase bandwidth consumption by a factor of over 100. These growth factors point in one direction – a growing log jam grinding the Internet to a crawl and into an electronic wall. What is not as well known, but is equally critical to our story, is the percentage of Internet traffic that consists of common content. For instance, on the average weekday evening approximately 37% of Internet traffic consists of videos⁴ most of which is common content, that are largely the same feature films – more than 50% of the video traffic, 20% of all of Internet traffic,

³ Chairman Genachowski, “The Clock is Ticking,” Remarks on Broadband to Mobile Future Forum, Washington DC, March 16, 2011 (hereinafter, “Chairman Mobile Future Speech”).

⁴ See Attachment 3, graphs on Fixed and Mobile Data and Video Demand Forecast.

consists of Netflix movies.⁵ And this skewing toward feature films and videos is trending upward with the continued growth in home grown video productions and the YouTube phenomenon.

21. What Solves the Internet Crunch. The key to solving this Internet crunch lies not in changing consumer habits, not in throwing more and more spectrum at the problem but in redesigning the down load delivery component of the Internet – ironically by turning to reliance on the very technology that many have thought to be outmoded - broadcasting. In a nutshell, what we call “Broadcasting the Internet” is the one and only viable solution.
22. Now we at CMMBA are by no means the first or only ones to recognize that broadcasting the common content is the answer. Many broadcasters have known this for some time. They have been pushing their vendors to optimize solutions for broadcasting video to mobile devices. They have been experimenting with the currently approved ATSC-MH mobile standard (though as we discuss below this is proving to be a substandard answer).⁶ Broadcasters are demonstrating, not only that there is a ready and receptive audience for broadcasted broadband to mobile receivers, but that broadcasters can do it now, way in advance of the ability of mobile carriers to do so. And most significantly the mobile carriers themselves clearly recognize this and are acting to incorporate this capability into their networks.
- a. For example, the CTO of Verizon Wireless recently stated:

“We're working with all of our infrastructure providers ... to develop the technology to incorporate a broadcast capability. * * * We think that

⁵ E.g., Donnelly, “Applications, Broadband General, Broadband Trends, October 26, 2010.

⁶ See Attachment 2, which contains a performance comparison between ATSC-MH and CMMB.

will be a solution to this problem down the road, that there will be a broadcast element to our 4G network that can then more efficiently deal with the live content.”⁷

23. What is mystifying is that the Commission has not taken this “here and now” solution into account. In all of their proselytizing speeches and presentations, there is no evident attempt by the Commission to investigate whether it is an architecture problem, rather than a spectrum problem that is creating the choke points, and whether broadcasting common content might not in fact hold the key to the answer. We urge the Commission to take a step back and look at the spectrum crunch through this prism and then ask themselves why the broadcasters could not and should not be allowed the time and latitude: (1) to prove this business model right now with their existing technology and (2) to experiment with the advance technologies that will solve the interference problems raised by the Commission as the reason that spectrum must be “cleared” nationwide. We will address this last contention - the alleged need for mobile carriers to have contiguous spectrum nationwide in sections below.
24. Faster. Our premise here is, not just that broadcasting is the solution to the Internet traffic jam, but that, if the broadcasting industry, and most particularly the LPTV segment of it, is permitted to provide mobile services, the National Broadband objectives will be satisfied surer and sooner. The Commission can declare victory and move on. If broadcasters are permitted to do what they do best, mobile broadband will arrive sooner, will deliver more services to more people and much cheaper with basic service free, which is about as cheap as service could be, and with more money sooner to reduce the national debt.

⁷ Tony Melone, Open Mobile Summit, San Francisco, as reported in IDG News, Nov. 8, 2010.

25. What prevents broadcasters and mobile carriers from broadcasting the Internet right now is the functionality gap between user devices for receipt of TV broadcast signals and those receiving mobile services. Broadcasters have been working diligently for a number of years with equipment vendors to deploy the ATSC-MH mobile extension to the fixed ATSC standard. However, ATSC-MH is still in its infancy. There is not yet a commercially available supply of receivers, much less the deep and mature supply of existing 3G and 4G handsets, tablets and dongles that is already the case with CMMB as a result of its deployment in China. It is estimated that the widespread availability of ATSC-MH devices is still two years in the future.
26. But the time lag is not the biggest problem with the M-H mobility standard for ATSC. There is no doubt in the minds of those with whom we are in contact and who have tested the comparative performance of ATSC-MH and OFDM-based replacements that ATSC-MH is a much inferior standard.⁸ The inability of ATSC-MH to perform adequately requires that the broadcasting community move quickly to complete its demonstration of the superior capabilities of OFDM replacement technologies. The gating item here is the need for the FCC and the international standards body (the Advanced Television Standards Committee) to approve CMMB and similar OFDM technologies for use in broadcasting. The Commission can do its part by immediately commencing an appropriate rulemaking.

⁸ A comparison of the attributes of ATSC-MH and CMMB appears in Attachment 2. The purpose of the modified experimental application that WatchTV, the low power licensee serving Portland, Oregon, filed last October was to further test this hypothesis and to be able to publish the results of its side-by-side comparison to the Commission and to users, mobile service providers and the investment community. In a rare action, Media Bureau denied this request but without prejudice to a refiling. See page 42 below.

27. Once the Commission reverses its initial inclination and authorizes comparative demonstrations of the attributes of ATSC-MH and CMMB and the degree of interference between the two, the broadcast industry can move forward aggressively to prepare to introduce this technology in the marketplace. In the meantime, some off-loading of common content from the Internet downstream path can be accomplished for deliveries to fixed video devices equipped with ATSC and by those broadcasters who choose to move forward with ATSC-MH as a mobile standard. There are external devices (“dongles”) available in the market place now that can bridge this gap by using dongles to deliver ATSC to lap tops and hand-helds that are not ATSC equipped. These cost of these dongles is modest - starting at less than \$60 to around \$20 in volume production. These are easily affordable by users as part of a long-term service contract. These dongles may in many instances be partially if not wholly subsidized by the service provider as an early market entry and capture strategy. These dongles are about the width and length of present smart phones and less than half as thick. They can be easily carried in pockets or brief cases. They can be connected to a lap top, tablet or smart phone by either a wireless (WiFi) or a USB port. Very few smart phones and laptops do not have either one, if not both, of these connections. These dongles can also be used, as an interim gap filler, to alleviate the prime time traffic crunch to static devices, such as the home computer and cable-connected TV set.
28. So how does this broadcasting capability, whether ATSC or CMMB/OFDM, solve the common content problem when much of that common content will be viewed at different times? The answer starts with Moore’s Law and its impact upon

telecommunications. The storage capacity of user devices is following Moore's law but on steroids and increasing dramatically each year. Solid state memory cards are now available with storage capacity of up to 128 GBs⁹ with two Terabytes of capacity currently in development by Sandisk among others. This quantum leap in storage capacity even on handheld user devices is what enables broadcasters to off-load the common content from the Internet. A growing number of handhelds, as well as laptops and portables, will easily be able to handle short-term storage of common content without any interference with the functionality of their devices. This is due to a combination of user device storage capacity, consumer buying habits and the metrics available to content providers.

29. The Internet and its viral marketing capabilities have accelerated, sometimes to warp speed, consumer awareness of popular new feature film releases. As a consequence, the vast majority of viewers at any one time are watching a relatively few number of theatrical releases. For instance, a recent internal study by a major Over The Top distributor of video content concluded that only some 5% of its titles accounted for 70% of the content transmitted over the Internet to its subscribers. Couple this with the ability of content providers to mine this data on a real-time basis, and the stage is set for the content provider to be able to predict with sufficient accuracy the day before what titles will likely be in highest demand the next day. This gives the content provider the metrics it needs to direct the broadcaster to download the leading titles during the early morning hours. And given the storage capacity of the user devices many more titles than are generally needed can be downloaded without

⁹ As the average Standard Definition display of a movie requires ~1 GB, these 128 GB handsets could essentially store 128 feature films. Current smart phones are typically available with capacities ranging from 16 to 64 GBs of embedded storage.

impacting the functionality of the user devices. Any possible threat is removed by the algorithms that ensure that stale content is constantly removed in the order of its lack of utility. This ensures that the user always has more than sufficient capacity for whatever his needs - seamlessly and without any actions required of him.

30. The tools are thus in place - here and now - to broadcast the Internet to a significant and constantly growing percentage of the population, particularly to those early adopters and high volume video addicts who are jamming the Internet. The broadcast industry is indeed shovel ready. There over 4,000 stations in operation, with over 1700 full power stations already fully capable of digital transmissions. Given a signal from the Commission that their investment will not be eviscerated, another 2,200 licensed LPTV stations (joined over the next three years by LPTV stations currently in construction permit status) will be able to convert to digital and join the full power stations in Broadcasting the Internet. This is more than enough capacity to bring coverage to the vast majority of the population, and by people who are experienced and in place, shovel in hand. The White House and the Commission need not wait a half dozen years and wade through numerous repacking models, industry conferences, serial rulemaking proceedings and uncertain auctions before the Internet congestion problem is well on its way to resolution.

31. Slow Rolling the Future. There can be little doubt that the law of unintended consequences will bedevil the Commission's auction/repacking plans time and time again. The Commission has just now released in this Notice only its "preliminary" steps. The next step has to be Congressional legislation. What in other times might be a relatively swift passage already has run into significant bi-partisan opposition in

the lower chamber, an unusual coalescence in this quite partisan Congress, auguring delay and an uncertain outcome. The next step will be perform more difficult. The Commission will have to complete a rulemaking to adopt rules for a unique (to the Commission) “two-sided” auction. This will be a far more complicated auction than the Commission has ever held necessitating the solicitation of “reserve” prices from broadcast licensees (essentially “educated” guesses as to what their spectrum might sell for compared to what future revenues operation as a broadcaster and mobile services provider might bring) and then the reparceling of broadcast stations with widely differing coverage contours into Cellular Market Areas. The Commission has been laboring hard to come up with computer models that will solve the complexity of the problem. But the computers cannot solve the initial problem - how to assure the stakeholders in the rulemaking proceeding that their plan is predictable, rationale and doable. Our point here is not to say that these myriad and thorny issues cannot be eventually resolved, at least to some extent, by the Commission. Our point rather is that the process will take time, lots of time, undoubtedly more time than planned. One thing seems as certain as anything and that is that the four to five years (2015 “at the earliest”) to complete the auction assumed by the Chief of the Media Bureau will not be met.¹⁰ Four to five years, of course, is still an eternity in this day and age. Furthermore, we believe that the law of unintended consequences squared by complexity guarantees a broadband start date after Commission auctions of 2016 or 2017, almost eight years from today. A gap of a half dozen plus years in the start of

¹⁰ The Chief of the Media Bureau assumed legislation would be passed this year, a rulemaking completed next year, auctions in 2013 and 2014 and broadband spectrum’s “earliest availability in 2015.” Media Bureau Webinars, March 16, 2011. As with any one in his position his predictions are bound to be as optimistic as he believes he can legitimately be.

broadband services would wreck havoc with the National Broadband plan. The CMMBA plan would avoid this conundrum by promising a start fully seven years sooner.

32. Better. The question is some quarters is how can we contend that the CMMB America plan for a hybrid broadcasting/mobile broadband network propelled by broadcasters will, not only be faster off the mark, but “better” than the Commission’s plan? At first glance this proposition appears to be difficult to sustain. After all the mobile providers should be able to recruit the expertise to broadcast the Internet, as we assume they are intending to do when they have finally completed their acquisition of the 500-600 MHz spectrum and are ready to roll-out their services. But our plan is demonstrably “better:” (a) because the broadcast industry will start with vast amounts of coverage that it will take much time and many resources for the mobile carriers to replicate; (b) because broadcasters will be both able and motivated to reach the rural areas with more coverage sooner and (c) because the CMMB America plan will increase diversity among ethnic and religious voices in both urban and rural areas. CMMBA’s plan to increase diversity is a difference that the mobile carriers do not offer and could not effectively offer even if they were so motivated.
33. The last two propositions – broadcasters being able to reach the rural populations sooner and increasing diversity - stem from a common set of factors, (1) the public interest requirements imposed upon broadcasters and not upon mobile carriers and (2) the economics of CMMB’s plan for the utilization of LPTV stations. We will address first the second point- the way that CMMBA’s plan leverages LPTV’s stations’ smaller coverage areas and much less costly operations. One of the consequences of

the CMMB America plan is that the number of sustainable LPTV stations serving rural America will multiply several fold. Hundreds of rural towns, including many with populations below a thousand, which have never had a local voice, will now have their own television station in addition to wireless broadband, and both will be free.

34. New Rural Voices and Broadband Ahead of Their Time. Admittedly, this sounds like a pipe dream, particularly in light of the migration of an increasing number of people to the Internet, the mounting losses of LPTV stations and the comparatively minuscule populations in the smaller towns in rural America. The key here is the growth in demand for wireless broadband. CMMBA's advertising-supported Internet service should produce sufficient surpluses not only to permit free basic mobile broadband but also to support the CAPEX and OPEX for one broadcast station in each town along each highway in its national system. CMMBA's network plan calls for at least two and in most cases four LPTV stations covering the same geographic area even in the smallest communities. This capacity is necessary to handle the interstate and intrastate automobile traffic. One station will be dedicated to broadcasting with six broadcast signals initially, growing to eighteen and more with MPEG 4 compression. The average number of mobile broadband users in each small town is expected to be much larger than the static population of the town itself.
35. Because of these factors, CMMBA's business plan is postulated to produce sufficient surpluses to subsidize the local community television station even assuming a much lower ad value for each viewer than is assumed even now by the leading Internet content providers. The typical rural LPTV station is projected to employ a minimum

- of ten persons full-time (and more in the larger towns) and an equal number of part-time workers. Not only will a dozen or more equivalent jobs be created in these small towns, additional jobs will be supported by the infusion of dollars into the community and the collateral jobs that inevitably will spring up. There will be opportunities for internships by local students. There will be an increased sense of community and live televising of local sports, news and community events that can be received for the first time on the go and in the medium preferred by the social media generation.
36. This is not a pipe dream but a carefully calibrated business plan designed by veterans in both the broadcast and the mobile services businesses. It will lead to broadband to rural America at a much quicker pace than the Commission's plan, with the very substantial advantage of thousands of new local voices and jobs. This will be a welcome and much needed windfall for these local residents. The added benefit of great importance for a country faced with a tsunami of deficit spending is there will be no need for the President's proposed \$5 Billion in rural broadband aid, nor his additional \$3Billion in R&D, the latter because the industry is already way ahead.
37. The first point we made in this subsection was related to the difference in public interest obligations imposed upon the two industries contending for the broadcast spectrum. The contrast could not be starker. Unlike the mobile carriers, broadcasters have had, since their inception with the passage of the 'Communications Act of 1934', significant public interest obligations not imposed upon the mobile carriers.
38. Slashing Diversity. One of the most disheartening and perplexing aspects of the staff plan to disenfranchise the low power industry is its devastating impact upon diversity of expression, culture, ethnicity and religion. The Congress and the Commission

established the Low Power Television service for the express purpose of increasing diversity – and it worked. The Commission has noted this repeatedly. For instance, in the order creating the Class A service, the Commission stated:

“Many LPTV stations air “niche” programming, often locally produced, to residents of specific ethnic, racial, and interest communities within the larger area, including programming foreign languages.”

“The LPTV service has increased significantly the diversity of broadcast station ownership. Stations are operated by such diverse entities as community groups, schools and colleges, religious organizations, radio and TV broadcasters, and a wide variety of small businesses. The service has also provided first-time opportunities for minorities and women.”¹¹

39. The degree to which LPTV stations continue to promote diversity both in their programming and in their ownership was demonstrated starkly in a Fall 2009 survey by industry’s now defunct trade association (the Community Broadcasters’ Association).¹² The survey estimated that 45% of the LPTV licenses were minority-owned and 60%, women owned. And one out of every three was at least partially employee-owned. The CBA’s survey determined that at least 31 different languages were spoken with almost one-third of the stations broadcasting in a foreign language. These included the major second languages in the United States (Spanish, Native American and Asian) and a number of the lesser known ones including Armenian and

¹¹ Paragraph 2 and 3, Report and Order, MM Docket 00-10, FCC 00-115, April 4, 2000

¹² The Community Broadcasters Association, “Diversity Defined.” The demise of the CBA was a direct result of the diminishing revenues of the hard-pressed LPTV industry.

Urdu. A large percentage of the LPTV stations continue to broadcast primarily religiously-oriented programs.

40. Taken to its extreme - repacking throughout the nation - hundreds of low power stations will lose their license and lifetime savings, with nary a wave goodbye. The only way evidently that the staff believes that their plan to repack is feasible in larger markets is if they totally disenfranchise all of LPTV. Sadly, in all of the discussions to which we have been privy, we cannot remember any real concerns ever voiced over the resulting loss of minority and religious programming.
41. It is necessary here to return to first principles. The very first section of the Communications Act declares its purpose to make “rapid efficient, Nationwide” communications “available, so far as possible, to all of the people of the United States without discrimination on the basis of race, color, religion, national origin, or sex.” This purpose leads to the commandment in Section 307 that the Commission “when and insofar as there is demand for the same . . . make such distribution of licenses . . . among the several States as to provide a fair, equitable and equal distribution of radio service to each of the same.” At first blush - and a second and third - it is hard to see how the Commission could justify an elimination of LPTV service to hundreds of minority and religious segments in light of these foundation commandments. How could the Commission then claim it has satisfied the requirement that it distribute licenses to “all” of the people without “discrimination” in a “fair, equitable and equal” manner!
42. It may be that the Commission believes that the commandments of the Communications Act regarding the needs and desires of those segments of the

population now served by LPTV broadcasts will be served as well in other ways.

They may be relying upon cable, satellite and the Internet to replace over-the-air free (“OTA”) broadcasting. Their mistake lies in ignoring the logical consequences of the ad-supported nature of broadcasting, which enables it to be free to the user. Each of the alternatives, with rare exceptions, requires at least monthly cash payments. And for many, if not, most people the continuing consolidation in these alternative industries does not portend a decrease in their charges. This of course is why substantial segments of the population still rely upon free broadcasting.

43. The Commission staff also defends its compliance with the Section 307 commandment of equal distribution by “assuming” that there will be at least one station left in each community. This is not a promise, just an “assumption.” The staff has not, to the best of our knowledge, explained how they will guarantee this result - and we cannot see how they could. In a “volunteer” auction that decision presumably does not rest with the Commission. In any event, the lone remaining station in each community is rarely going to serve minority interests given the economic necessities and rewards of appealing to the most numerous and well-off segments of the market.

44. Proponents of the Chairman’s repacking plan continually parade the bromide that only ten percent of the national population watches OTA free television. But while ten percent may be a small fraction of the entire population, it still constitutes thirty three million people. To put this in some perspective this is close to the number of people that the President and his party fought stubbornly over for months to ensure they received adequate medical coverage under the Health Care Bill. We would

expect and hope that the Commission would think long and hard before it disenfranchises 33 Million people. And this is not the end of the story. It appears that the percentage of households relying solely on OTA is no longer diminishing and may indeed be increasing according to recent studies conducted by the NAB. Hard economic times and the relative high price of MVPD charging alternatives evidently has resurrected free OTA as a viable alternative.

45. Furthermore, the 10% shibboleth substantially understates the actual number of potential OTA viewers. There is evidence that as much as 1/3 of the nation's households have at least one OTA TV set. Granted, in many cases these are not the primary means of the household's access to television. They are located in kitchens, spare bedrooms, tool sheds and the like. But those TV sets are put there and stay there for a purpose and must be counted in any conclusion as to how many households will be denied some of their access to TV by the proposed repacking plan. In any case, it is not necessary to reach a concrete conclusion of how many persons will lose OTA in a repacking. Regardless of the actual number, there should be no dispute that number being disenfranchised is significant and meaningful.
46. Most importantly, many of the very demographic segments that the Commission set out to serve in establishing the LPTV industry thirty years ago are the ones to be denied OTA. We find it impossible to square the repacking proposal with the Communications Act's directives. Section 1's admonition to make communications available without discrimination on the basis of "religion" or "race" or "national origin" surely ought to prevent the withdrawal of such services. The Commission could scarcely argue that it is excused from its duties by the caveat in Section 1 of "so

far as possible.” This simply will not wash. As the OTA services already exist, they are clearly “possible.” The Chairman’s plan also violates the Section 307 precepts requiring a “fair, equitable and equal” distribution among the States. Requiring a substantial number of persons to pay for television while the majority do not can in no way be considered fair or equitable or equal. The Commission must confront these first principles first and foremost before it proceeds further down the path that the Chairman is advocating.

47. There is an additional issue that begs mentioning at this juncture. There is nothing in the Communications Act that even remotely suggests that the admonitions in Sections 1 and 307 can be tempered by a purpose to contribute to the Treasury receipts. And that would not make any sense for any number of reasons. The Commission is not equipped to make judgments as to budgetary expenditures. This is a legislative function in its initial instance as delegated in the US Constitution and subject to considerable give and take by a body better equipped and within a much broader scope than one item among thousands of proposed expenditures. This is not to say that we are against using auction proceeds to reduce the budget deficit. Indeed quite the opposite. We not only support that goal, we have quite deliberately designed the CMMBA plan to produce a greater contribution. Our point, rather, is that the diversity enshrined in the Communications Act cannot legally be satisfied even partially by budget concerns or remedies.

48. Cheaper. There are several reasons why the CMMB America plan should be substantially cheaper than the Commission proposal. In the first place, the basic infrastructure to support broadcasting and mobile services – propagation assessments,

interference engineering, broadcast station licenses, local permits, electric power, towers, antennas, etc – are already in place. And long before the auction takes place, the LPTV segment of the broadcast industry can be expected to have converted to digital as the Commission is proposing. The auction winners, in contrast, will have to invest in digital broadcasting facilities and new antennas and sites and transmitters in order to achieve the necessary economies of broadcasting common content (unless they partner with broadcasters). In the second place, CMMBA and the other LPTV broadcasters who spurn the auction and elect to expand their services to include mobile will be spared the necessity of plowing billions of dollars into the US treasury at the beginning - at the very time that huge expenditures are needed to build out their networks. Instead they will be able to emulate the auction winners' contributions to deficit reduction over time in part as a percentage of revenues, not as an accumulated loss. Most savings will come from the simple but critical element of "Broadcasting the Internet," saving in a nationwide network billions of dollars in foregone cell sites and "backhaul" fees.

49. Does National Wireless Broadband Require Contiguous Channels Nationwide? The major justification for the repacking is the contention that mobile carriers must have the same channels in each market, that is, there must be a nationwide clearing of whatever channels are designated for the auction. Leaving pockets of broadcasters interleaved in the auction bands, it is alleged, will reduce the value of the channels at auction and therefore reduce the amount of funds that can be used for deficit reduction.¹³ It is also contended that "interspersing broadcast and broadband uses

¹³ Media Bureau Webinars, slide 12 ("A successful auction would require the FCC to package the newly acquired spectrum into blocks that maximize efficiency and value for bidders."); slide

throughout the auctioned spectrum would carry a risk of interference between television and wireless operations.”¹⁴ We do not believe that either of these assertions will be valid by the earliest time the auctions could be held.

50. There are several reasons that nationwide cleared spectrum cannot not be seen as a sine qua non here. In the first place, the contention is based upon stale assumptions from this past decade’s configuration of base station technology and mobile handsets. It does not account for the recent developments in chip sets and infrastructure leveraging cognitive radio technologies. Handsets now being delivered are already frequency and protocol agile across a broad spectrum.
51. The allied contention that comingling broadcast and mobile transmissions will create interference is also based upon outmoded technology and a misapprehension of what the situation will be by the time any auction could be conducted. Though unacceptable interference may occur where channels using the current ATSC 8VSB modulation are interleaved with mobile service channels, it most certainly is not true in the case of advanced broadcast modulations using the Converged Mobile Multimedia Broadcasting standard proposed by CMMB America. The dispositive fact is that CMMB is based upon the identical OFDM standard used in the mobile carriers LTE and Mobile WiMAX networks. By its very nature CMMB can be engineered and operated so as to avoid interference to the coming generation of mobile user devices. Once the Commission and the international Advanced Television Standards Committee permit the introduction and diffusion of CMMB in

(“Configured into large, contiguous blocks by the FCC to create more value for stakeholders to share.”); slide 5 (“FCC’s consolidation of spectrum would increase value to bidders and contributors.”)

¹⁴Id., slide 12.

the US any interference problems will have been solved by the marketplace without the need for governmental assistance or red tape.

52. It is important to recognize the time frames involved here. As we showed above, even the optimistic projection by the staff is that the Commission's proposed repacking and auction approach will not permit the beginning of mobile broadband service until 2015 at the "earliest." Government predictions and the vicissitudes of business planning and implementation, not to mention Congress, being what they are, guarantee that the actual implementation will not occur for a half dozen years or more. Before then, if not way before then, CMMB and allied OFDM technologies will be ubiquitous. Interference will easily be preventable. Any need for cleared channels will have completely dissipated, - as the advances in self organizing networks, software defined base stations and cognitive radios that can easily combine multiple digital streams into virtual channels will all be a reality in the market. To create long term forward-looking policies by relying on the obsolete metrics of the past will not satisfy the National Broadband Plan.

53. The fact that the large mobile carriers and their trade association (CTIA) have weighed into this debate supporting the contention that they will pay more (and hence produce more money to reduce the deficit) if spectrum is cleared nationwide is hardly surprising but must be viewed with great skepticism. It is an easy assertion for the mobile carriers to make – they will never be put to the proof or suffer a penalty if they overstate. It serves well the purposes of the largest carriers to aggregate as much spectrum as possible to block their competitors including the cable operators and ensure their dominance for years to come. And they clearly will not hesitate to spend

billions to achieve this end as they demonstrated in the last auction of “reclaimed” broadcast spectrum.

54. A final point here. The claimed necessity to clear contiguous blocks cannot be squared with admissions by the Commission staff and by the mobile carriers’ trade association (CTIA) that repacking will not be necessary in at least some of the secondary markets. For instance, the Commission staff’s slides being used in their regional presentations intended to allay fears among broadcasters admit this.¹⁵ If repacking does not occur in every market, then those markets will not be cleared at least by Commission action and this basic justification fails.
55. The lack of need to repack in smaller markets is all the more reason not to involve the government in the process. With broadcasters such as CMMB America building out in these smaller markets and in the rural areas, the two industries, broadcast and cellular, will of necessity have to meet in lengthy negotiations over roaming agreements and their operational details. Even lengthier and more complicated discussions will have to ensue in order to rationalize the differences between the standardized Cellular Market Areas and the quite disparate size and location of the broadcast industry’s protected contours and the areas beyond where interference-free signals can still be received. For the government to undertake to rationalize this itself, no matter how sophisticated the data processing systems proposed, is, to those of us in the field, as it should be to the Commission, too daunting to contemplate seriously. To be a referee and adjudicator of last resort is one thing. To be the dictator, given the pace of technology, the number of competing interests and plans, is

¹⁵ E.g., Media Bureau Wedinar, slide 13 (“Rural areas would be likely to have fewer channels realigning than urban areas”).

quite another, one that makes little sense to those of us who live this daily. Private industry is ready, willing and able to work this extremely complicated task to a rationale conclusion. The Commission may be willing but it is neither ready nor able.

56. Private Initiatives v. FCC Dictates. In an era when there are increasing complaints from a variety of quarters (most recently from a substantial percentage of the freshmen representatives elected in the last mid-term elections) about the size of government and its ubiquitous presence, it is more than a bit surprising for the Commission to cavalierly dismiss the alternative of private enterprise. We recognize that, once the freight train of policy wisdom has a full head of steam, it is difficult to slow it down, much less divert it to a different track, even if the destination is the same. We submit, however, that those at the Commission adhering to the conventional wisdom inside the Beltway, aided and abetted with a wink and a nod by the mobile carriers, need to stop, step out of the cab and examine the broadcasters alternative without prejudice and from a zero-basis. The mere fact that a policy position and supporting factoids have been repeated at dozens of conferences by experts or that smart, sincere, hardworking people keep arriving at the same conclusion, doesn't make it true.

57. Nowhere is this more apt than in the case at hand. The conventional wisdom is that broadcasters are dinosaurs; that broadcasting has past its prime; that all of the American people (at least those that count) have turned off their TV sets; that only the new kids on the broadcast spectrum block, the mobile carriers, can solve the Internet crunch. We hope that we have raised sufficient questions that these premises will be reexamined from a fresh perspective. And that the starting premise will be, as it

should be, why can't this be done by the private sector and by the incumbents and not why shouldn't it be done by the government and the supposed newcomers. The burden should be on the Commission to justify intervention, not on the private sector broadcasters to defend their abilities.

58. History both in communications and in other regulated industries - from rail to plane to, some would submit, airport security and TSA - demonstrate the folly of involving the government too deeply in decisions on how to rationalize the structure and operations of complex businesses. Here is a classic case where private enterprise, in the form of the broadcasters and the mobile carriers, can do a better and faster job of rationalizing the appropriate intersection between operational needs of their networks. We recognize that some of the private sector's efforts at voluntary clearings of spectrum in the past have not worked well. But that should not mean that the Commission's iron hand will work here. The greater the complexity, the greater the difficulty of the solution being devised through the labyrinth of the government. The requirement of due process, due deliberation and transparency will add years to the task at hand and with a higher likelihood of failure. This situation is tailor made for the private sector to take the lead and for the government to operate with a barely visible hand.

59. The broadcast industry has in fact seized the reins. They have the facilities in place and operating, and customer equipment in the field. Broadcasters have, for some time, been delivering over-the-top ("OTT") content¹⁶ to fixed locations. They have recently been demonstrating and developing the new ATSC-MH standard for

¹⁶ Over-the-top content is content that is ordered directly from a rights holder, like Google and Netflix, rather than from the customer's ISP, and delivered via the transmission facilities of a provider chosen by the content owner, which may or may not be the customer's chosen carrier.

delivering content to mobile devices under the auspices of OMVC, which led to the Mobile 500 and MCV initiatives. Both of these activities only use the downstream portion of the two-way mobile broadband service. The customer must still place the upstream order through its chosen ISP. Once the Commission has permitted the use of OFDM- based technologies such as CMMB in the field, the stage will be set for both segments of the telecommunications world to form various alliances to achieve the full measure of the National Broadband Plans goals. In the meantime, the broadcasters will be moving with full speed to relieve Internet congestion by off-loading the substantial amounts of video downloading.

An Alternative Regulatory Plan

60. CMMBA submits for the reasons stated above and below, the only feasible plan without the downsides of the Commission's plan, and with additional upsides, is:

- a. Refrain from repacking any channels:
 - i. Repacking is not necessary given frequency and protocol agile end user devices.
 - ii. Private commercial interests can rationalize the market quicker and better.
- b. Hold voluntary auctions for all UHF channels.
- c. Hold public auctions of voluntarily surrendered spectrum from the UHF TV spectrum.
 - i. Encourage private auctions, mergers, joint ventures
- d. Keep all broadcasters in the game

- i. LPTV stations (as well as translators) who are active and operating at the time of the auction in their market have a choice of continuing to broadcast on their existing channels or contributing their spectrum to the auction
 - 1. Include any construction permits that are still outstanding at the time of the auction or subsequently filed;
 - 2. Continue to process applications on a routine basis
- e. (1) Require broadcasters to continue to pay the 5% fee on ancillary revenue such as mobile broadband services including over-the-top services PLUS (2) require broadcasters that provide mobile services to contribute monies equal to the average paid in each market in any future public auction for the broadcast spectrum in their market
 - i. All of the amounts of the 5% fee paid from inception to the date of the auction would be deducted from the auction benchmark.
 - ii. The additional auction-matching fees paid by the broadcasters who stayed the course would be paid over a ten year period, the same period of time as proposed by the President's budget for deficit reduction.
 - iii. Once the auction is held, either (1) the 5% fee on broadcasters gross revenues from ancillary services is eliminated, or (2) it is imposed upon all other private entities providing mobile broadband services using licensed spectrum in the local market.
 - iv. Broadcasters who participate in the provision of broadband services will be granted primary status. After paying their equivalent fees to the

auction winners will have their licenses harmonized to the CMA boundaries that most closely match their legacy broadcast license contours. Any boundary settlements will be the responsibility of the licensees, and settled using arbitration mechanisms.

61. Deficit Reduction. The Commission staff relies in the final analysis on billions of dollars that the public auction is supposed to produce for the US Treasury. In a time of a growing federal deficits and an emerging bi-partisan consensus that immediate and drastic steps must be taken to reduce the deficit, this is a compelling idea, and one CMMB heartedly endorses. We do, nevertheless, need to repeat a caution imposed by this Commission's mandates. The Communications Act's stated purpose in Section 1 and direct mandate in Section 307 must be satisfied first. It is quite clear that nothing in the Communications Act of 1934 or its amendments permits the Commission to allow the need for deficit reduction to interfere with the Communications Act's directives on fair, equitable and equal services to underserved segments of the population. Whatever the Commission does, it must not allow the compelling need for deficit reduction to override the Section 1 and Section 307 directives.

62. In any event, dispositive here is the probable outcome of a comparison of the deficit funds arising from the CMMB America plan with those projected from the White House's budget based upon the Chairman's auction plan. The White House recently released its 2012 budget. The 2012 budget estimated that a net of \$27.8 Billion could be raised from spectrum sales including but not limited to voluntary auctions. The

“net” amount presumably is the gross amount from spectrum sales minus proceeds shared with broadcasters, and possibly the costs of planning and conducting the auctions. Of this amount, \$10.7 Billion is to be reserved for a national public safety network; \$5 Billion to expand broadband in rural America \$3 Billion to a Wireless Improvement Fund for R&D for wireless technologies; and \$1 Billion over five years to the National Science Foundation for additional R&D (including some \$500 Million to the National Institutes of Standards to create public safety rules).¹⁷ This would leave \$9.1 Billion for deficit reduction - the White House budget projects that \$9.6 Billion would be used to reduce the deficit over a ten year period. The White House budget also projects \$4.8 Billion in revenue over ten years from a “spectrum license user fee.”¹⁸ . In addition to these expenditures, the Commission projects that it will cost \$565 Million to relocate broadcasters to the lower channels. Given the past history of the cost of relocation efforts and the inevitable increase (often in multiples) in actual costs over budgeted costs, this last cost bucket is likely to prove to be substantially understated.

63. The CMMB America plan would likely produce a larger amount of revenue in a shorter span of time. The CMMBA proposal would continue the 5% annual fee now imposed upon ancillary revenues. Current returns from this fee are admittedly paltry but that is not a precursor of the future as ancillary broadcast services are in their infancy and are constrained by the technology handcuffs applied only to the broadcasters. The fundamental and decisive difference between the CMMBA plan

¹⁷ Some of the details on the President’s budget come from a briefing by Aneesh Chopra, the federal CTO, as reported in the February 15 issue of “Communications Daily.”

¹⁸ This perennial and inevitably futile request is also rendered unnecessary given a go ahead for CMMBA’s plans.

and the Commission plan is that the CMMBA plan would require all broadcasters who elect to keep their spectrum in order to provide mobile broadband services to match the average price of the winning auction bids in their markets. The amounts these broadcasters had previously paid to the federal Treasury through the 5% annual fee would be deducted from the amount due from the auctions. They would not have to pay the net amount in one lump sum but over the same ten year period as the White House has proposed for the auction proceeds to the Treasury.

64. An additional, and integral part, of the CMMBA proposal is that, once that the auctions in any given market have been completed, the 5% annual fee would have to be immediately adjusted. The Commission would have to choose between imposing it upon all providers of broadcast or mobile services in that market or upon none. Importantly, this proposal is not limited to those who obtained their spectrum in a public auction of UHF TV channels. Fair competition and a level playing field require that any entity using any licensed spectrum for competing mobile broadband services, regardless of the band, be treated the same as the broadcasters who are the only ones now required to pay the 5% fee. This would be limited to licensed spectrum and would not include unlicensed spectrum such as white spaces. White space users and providers do not have the same protections against interference as license holders.
65. Because the CMMB America plan requires matching payments from broadcasters who continue to use their spectrum to deliver broadband services and because substantial annual revenues will start flowing this year, there is little doubt that the CMMBA plan is a bigger winner for the Treasury – it will start years sooner and is

almost bound to produce a greater amount of revenue. Suppose, for example, that only 50% of the broadcasters contributed their spectrum to the auction. Suppose also that the auction of this contributed spectrum raised the net amount slated for deficit reduction posited by the White House - \$9.6 Billion. This would mean that the combination of the 5% fee and the matching funds under the CMMBA plan would be \$9.6 Billion, for a total of \$18.2 Billion to be applied to deficit reduction plus a saving of well over a half billion dollars in foregone relocation costs, for a grand total approaching \$20 Billion dollars in deficit reduction from the CMMBA plan. The White House/Commission plan, in sharp contrast, would only raise a total of \$14.4 Billion (\$9.6 Billion from auctions and \$4.8 Billion). The CMMBA plan would thus reduce the deficit by an additional \$5-6 Billion dollars. This is a significant difference even in the era of trillion dollar deficits. It is for example equal to 12-14% of the current White House proposal for current spending cuts. And this difference looms even larger when the savings in not using additional governmental resources and the inevitable cost overruns from the design, testing and conducting of the proposed public auctions.

66. Allowing Broadcasters to Keep their Spectrum for Mobile Services is Not Unjust Enrichment. There is a common misconception that, if broadcasters are permitted to sell their licenses at the FCC auction, they will be unjustly enriched – that is, broadcasters will receive much more money in any auction than they have paid out of their pockets for their licenses. This contention does not bear up under close inspection. The first point that the proponents of the “unjust enrichment” canard overlook is that most of these full power, and many of the LPTV, broadcasters bought

their licenses. Many of them paid tens, some hundreds, of millions of dollars. Second is the fact that digital broadcasters must pay 5% of their revenues from ancillary services, that is from non-broadcast services, directly to the Federal Treasury. The amount of these revenues is likely minuscule today as only full power stations have been required, and then only recently, to convert to digital transmissions, a prerequisite for ancillary services. But these revenues will become millions shortly and are slated to grow to hundreds of millions annually so long as the Commission allows all broadcasters (including LPTV) to provide mobile services using their present licenses. Finally, it is important to remember that low power stations have often poured family life savings into their stations, much greater proportional sacrifices by far than the large mobile carriers, which spent \$20 billion in the last auction of broadcast spectrum without batting an eye. And these low power stations have for the most part not taken out each year what they put into their stations. We submit then, that broadcasters who sell into the auction could not in general fairly be accused of unjust enrichment in any case. But the clincher is that under CMMBA's plan they would pay the same net amount in annual fees over an appropriate period of time to match whatever auction fees were paid by mobile carriers.

67. LPTV Qualifications to Keep their Licenses. The Snowe/Kerry bill (S.454) recently introduced in the Senate would define broadcasters eligible for participation in the auctions as ones who are "active" and "operating." Not incidentally, this bill would apply to all holders of licenses, a group that definitively includes low power broadcasters. CMMBA believes that the "active and operating" eligibility test is a

good model for the Commission to follow. We not only have no objection to the requirement that low power broadcasters be both active and operating, if they are to be kept alive, we actively encourage these twin criteria. Unless broadcasters are active and operating they will not be ready and able to carry out the National Broadband Plan. We also support the Snowe/Kerry ban on speculators defined as those whose “sole intent” in purchasing a station is to profit from the auction.

68. Include Valid Construction Permits. A number of LPTV licensees filed additional applications for rural stations during the currently-frozen fourteen month rural filing window. CMMBA is in the process of acquiring options to purchase rural LPTV construction permits and existing licenses in order to prove the validity of our plan. These rural Construction Permits and strategic alignments with a large number of existing licensees to create a national footprint are a core component of the CMMBA plan for addressing the broadband gap in both rural and underserved publics throughout America. All of our efforts are in complete alignment with the National Broadband Plan’s goals and aspirations.
69. CMMBA intends to commence implementing its national roll-out, including building these rural stations, just as soon as the Commission states publically and without equivocation that it will not disenfranchise LPTV stations who meet the eligibility criteria. Given the difficulty of raising investment funds with a sword of Damocles hanging over its head, CMMBA cannot commence this rural build-out until the Commission takes a public and definitive position that LPTV stations, the core of CMMBA’s rural network, will not be disenfranchised. Once that happens, CMMBA

will start a staged, region-by-region roll-out that will make rural markets a corner stone rather than an after-thought.

70. Include Translators. There are more than 4,000 licensed translator stations in operation. Their primary function is to repeat the programming of the originating station whose signal is inaudible in a particular community. Given the relative ease of switching from translator to LPTV status,¹⁹ the exact number of these stations at any one time is uncertain. These stations should also be included in the public auctions of broadcast channels if they are “active” and “operating.”
71. Unshackle Experiments with New Modulation Technologies. The Chairman and other members of the Commission have urged broadcasters to be innovative, to move forward with new technologies. And that certainly is a central theme of the National Broadband Plan and the White House proposal to spend an enormous amount on R&D (up to \$4 Billion) in implementing the NBP. It was therefore quite astonishing when the Media Bureau recently turned down the request of WatchTV to experiment in Portland Oregon with CMMB technology in conjunction with CMMB America. The denial of an experimental license is an unprecedented event.
72. The purpose of the denied experiment was to build upon and expand the previous experimental authority granted to WatchTV for experiments with the capabilities of ATSC-MH for mobile television in conjunction with CTB Group and others. Those previous experiments had raised serious questions in the minds of the participants as to the stability, signal quality and comparative throughput of ATSC-MH. WatchTV, and other LPTV broadcasters waiting anxiously in the wings, wished to determine the

¹⁹ Commission’s rules permits a translator to change its status to low power with a simple notification. Section 47 C.F.R. Sec. 74.732(e).

extent to which an OFDM-based technology such as CMMB would perform better than ATSC-MH. CMMB has the added benefit of a much more mature ecosystem with over 10 million subscribers operating compared to global availability today of only a few thousand ATSC-MH receivers. The follow-on experiment was designed not only to run real world tests of interference and comparative performance but to demonstrate to potential investors, regulators and fellow broadcasters the efficiency, performance and capacity advantages of CMMB. WatchTV has filed for reconsideration of the denial. It is also working with the staff to determine what should be contained in a developmental application, which was the alternative suggestion of the staff. We would urge the Commission to act quickly to allow WatchTV in conjunction with CMMBA to move forward with these experiments.

73. The Investment Pall over the LPTV Industry. With the release of the National Broadband Plan in the Spring of 2010, concerns started surfacing in the broadcast investment community and beyond that, in implementing the plan, the Commission might exclude LPTV stations from participating in either a repacking or an auction. There were repeated confirmations over the summer that the staff believed that repacking might prove to be impossible if LPTV stations were to be included as there simply would be too many stations with which to deal. The Staff indicated that it thought that the “secondary” status of LPTV stations would be sufficient justification to exclude them altogether. This information had an immediate and deeply chilling effect upon the investment climate for LPTV licensees. Few investors are willing to step forward and invest over the long haul in the type of hybrid

broadcasting/broadband services that LPTV licenses can provide with this dark cloud hanging over the future status of LPTV.

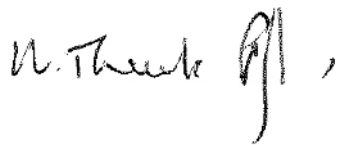
74. We believe that the regulatory history of the “secondary” classification demonstrates that LPTV was to be considered as “secondary” only to full power television stations and only for the purpose of determining which class of stations would prevail in cases of increases in interference or increases in contours and coverage. In our research we can find nothing that clearly points in the other direction. We are confident that this means that most if not all low power broadcasters obtained their licenses convinced, and rightly so, that their stations could not simply be whisked away to accommodate a third party wishing to provide services they were prepared to provide and without any compensation. Consequently, regardless of the final court-adjudicated legal interpretation of “secondary,” fairness and due process requires that LPTV not be excluded. What is equally important to the decision is the timing. Until the day the Commission announces that LPTV licenses will be treated the same as full power broadcasters, the investment climate to advance the NBP in the immediate future to the benefit of all the participants and the public will remain dim.

Conclusion

75. CMMBA urges the Commission to take three actions **immediately**:

- a. Declare that “active and operating” LPTV licensees (and translators) as well as those holding valid Construction Permits, will be included in auctions;**
- b. Permit experiments and demonstration trials of alternative technologies, both two-way and one-way downloads, including OFDM/CMMB, TD-LTE and Mobile WiMAX to prove that there is no interference issue causing harm to legacy ATSC broadcast system operators or the public’s personal television receivers.**
- c. Commence a rulemaking to permit the adoption and use of alternative technologies by broadcasters.**

Respectfully Submitted,



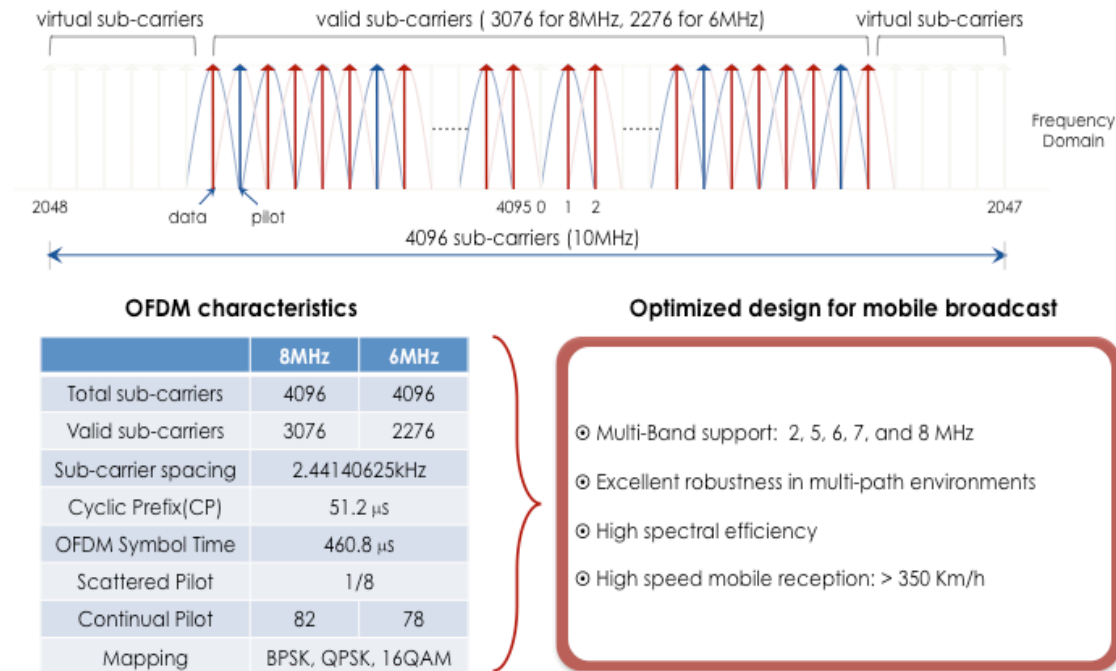
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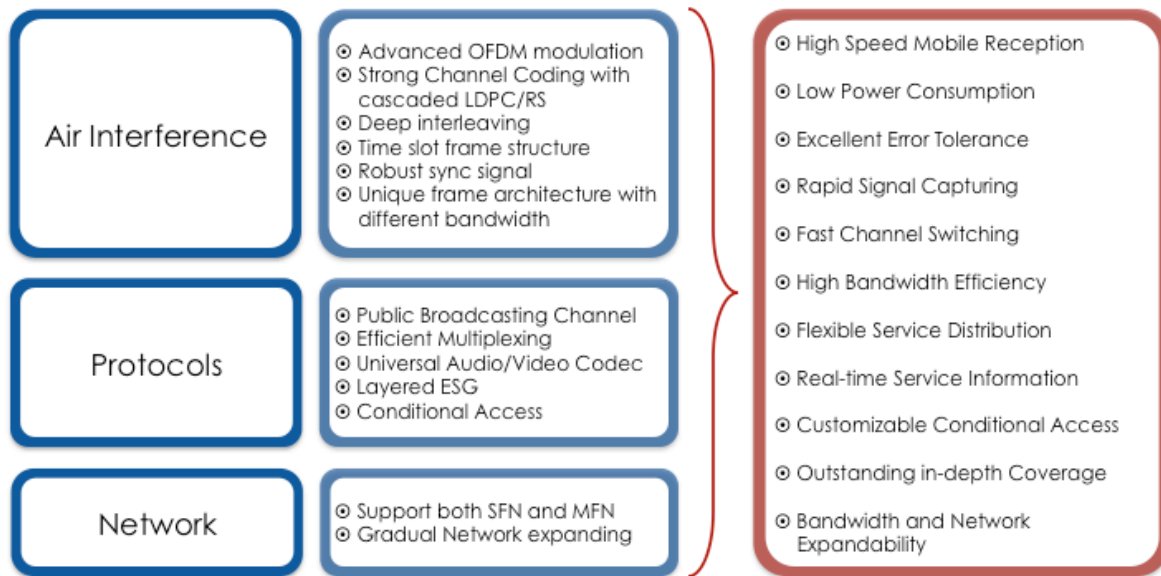
Attachments

ATTACHMENT 1

The principal characteristics of Converged Mobile Multimedia Broadcasting are summarized below.

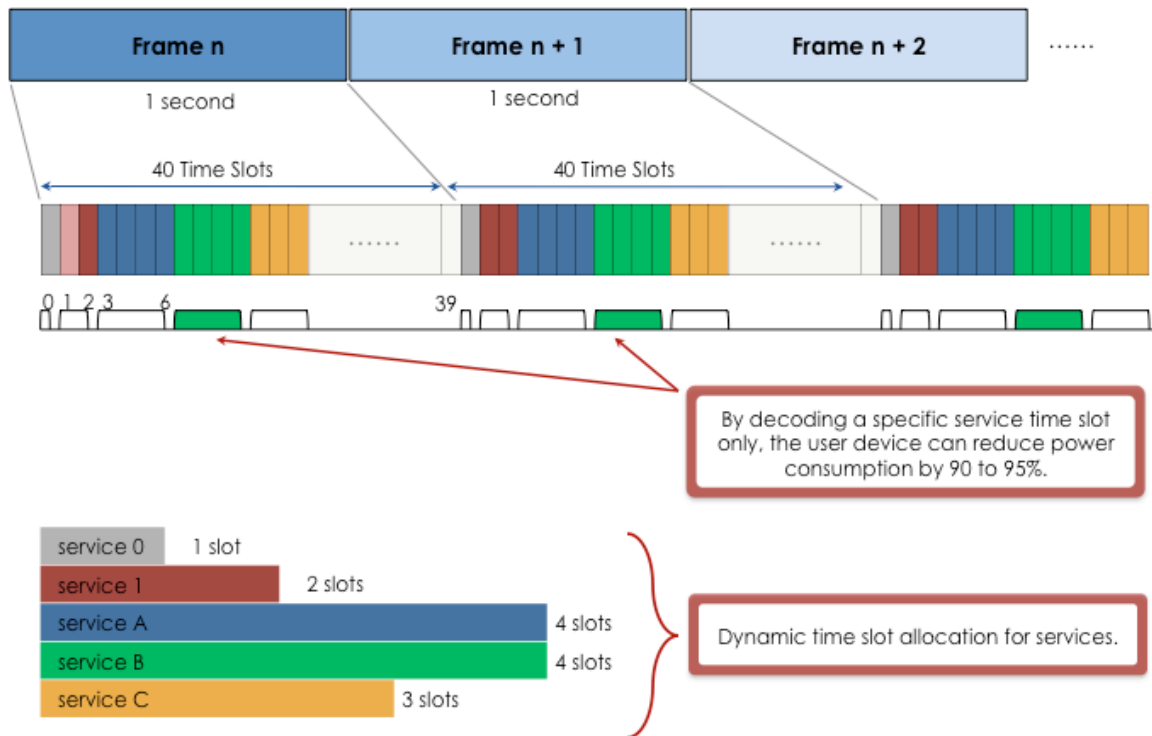


CMMB is not simply a digital live-TV broadcasting system. Rather, it is a highly sophisticated network architecture that covers the physical layer, the MAC layer, the security layer, the network layer, the application layer and various other aspects of network operations. In addition to its inherent advantages in mobile environments, a CMMB-enabled device also enjoys much lower power consumption, faster channel switching time, and deeper indoor coverage. All of these differences lead to better user experiences. These advantages are summarized in the table below.



One of the key limitations of the early mobile TV systems was the slow sync time – the initial channel scanning time can be as long as 3 minutes while the channel is up for only 10 seconds. Both situations are unacceptable to most customers. Unlike ATSC-MH, which uses a rather peculiar frame structure, CMMB adopts an evenly structured frame length of one second.

The channel switching time is thus as little as 1 second. Within each frame, 40 time slots are allocated, all of which can be arbitrarily combined to support a large variety of services. Such a fine granulation not only leads to significantly better power saving (7x better than ATSC-MH), but also much better payload efficiency through statistical multiplexing.



To combat signal outage in an unpredictable wireless environment, CM-MB supports deep interleaving options of up to 8 seconds. A direct benefit of such a design is much better signal coverage, especially in an urban environment. Out of the 331 cities in China, 180 cities already enjoy indoor CM-MB coverage up to 95% - a strong indication of how effective CM-MB is in delivering quality indoor service and how quickly and efficiently indoor service can be implemented.

ATTACHMENT 2

Performance Comparison Chart Between ATSC-MH and CMMB

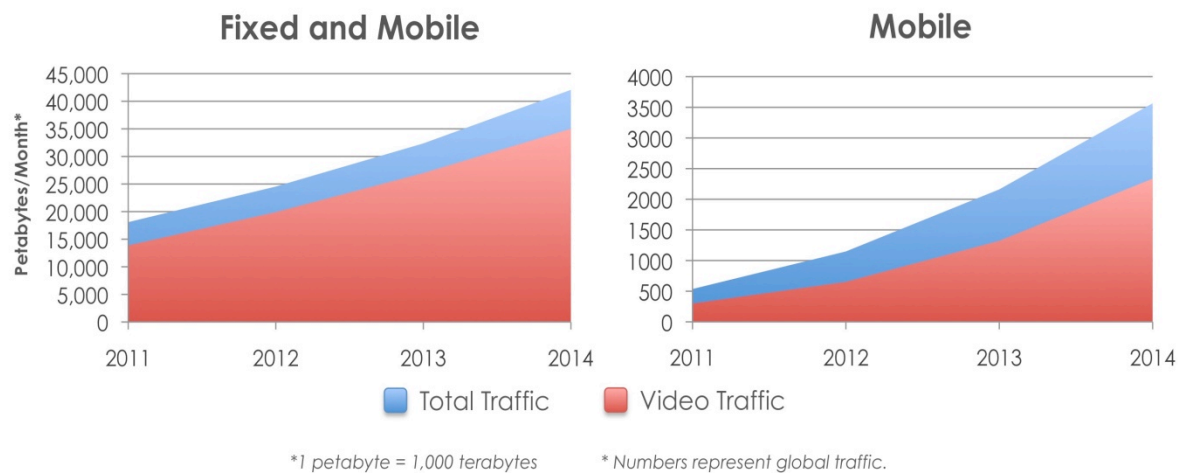
FEATURE	ATSC-MH	CMMB 6 MHz
Bandwidth	6 MHz	6 MHz
Modulation	8VSB	3K OFDM
Channel Coding	RS + Turbo	RS + LDPC
Throughput	5.6 Mbps	11.8 Mbps
Interleaving	1 second	1 second
Switch Time	7 seconds	2 seconds
Performance (Eb/NO)	5.4 dB	2 dB
Statistical Multiplexing	No	Yes
Fast Synchronization	No	Yes
Spectral Efficiency	0.93 bit/s/Hz	2 bit/s/Hz
Satellite Capability	No	Yes

ATTACHMENT 3

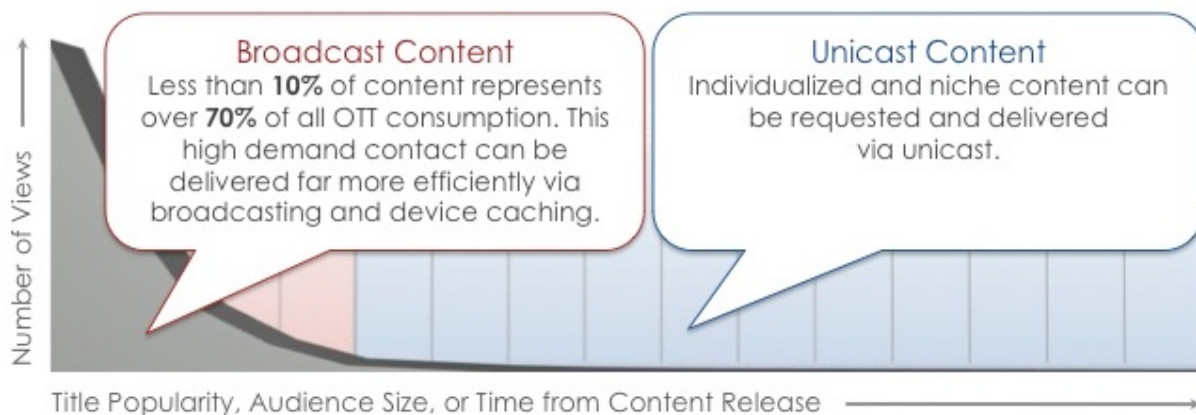
Fixed and Mobile Data and Video Demand Forecast

Today: Internet video comprises 37% of total Internet usage during peak hours. (Source: Morgan Stanley)

By 2013: Internet video will account for 90% of total Internet traffic and 64% of mobile traffic. (Source: Cisco)



The Broadcast Advantage



*Assuming an average SD movie is 1GB and an average MP3 song is 3Mb

**Source: Major distributor of OTT video purchase and rental, November-December 2010